This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

Claim 1 **(previously canceled)**

Claim 2 **(previously canceled)**

Claim 3 **(previously canceled)**

Claim 4 **(previously canceled)**

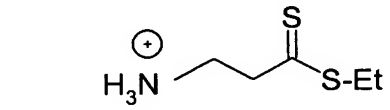
Claim 5 **(previously canceled)**

Claim 6 **(previously amended)** A method according to claim 35, wherein said coupling is a classical peptide coupling using a derivative of 2-(2-nitro-imidazol-1-yl) acetic acid in which the OH group of the carboxyl function has been replaced by a good leaving group.

Claim 7 **(currently amended)** A method for the synthesis of a compound according to claim 31 ~~or the corresponding non-labeled form thereof~~, comprising the steps of:

a) adding a THF solution ~~of 2 of Figure 7~~ to a suspension of PYBOP in THF followed by Et3N,

b) adding an amine ~~1~~ of ~~Figure 7~~ formula 1



and Et_3N to the solution obtained in step (a),

c) adding a catalytic amount to the solution obtained in step (b) of pTsOH and refluxing the solution,

d) cooling the solution obtained after step (c) at ambient temperature and adding a sodium bicarbonate solution,

e) extracting the product obtained after step (d) with ethyl acetate and drying and concentrating the product with ethyl acetate,

f) purifying the residue obtained after step (e) by column chromatography on silica gel,

g) removing traces of water by washing the product of step (f) with trifluoroacetic anhydride,

h) reacting ~~said~~ a persulphurated derivative obtained from step (g) with a suitable labeled ~~or non labeled~~ perfluorinating agent and a suitable oxidant resulting in a compound having a high yield of fluor atom incorporation,

i) deprotecting the nitrogen function, resulting in a perfluoroalkyl amine derivative, and

j) coupling the perfluoroalkyl amine derivative obtained in step (i) with an activated form of 2-(2-nitro-imidazol-1-yl) acetic acid, resulting in the [18F]-labeled or ~~non-labelled~~ perfluorinated-nitroaromatic compound.

Claim 8 **(original)** A method according to claim 7 wherein hydrogen fluoride/pyridine complex (HF-Pyridine) is used as a perfluorinating agent and 1,3-dibromo-5,5-dimethylhydantoin (DBH) is used as an oxidant resulting in a compound having a high yield of fluor atom incorporation.

Claim 9 **(cancel)**

Claim 10 **(original)** A first intermediate compound having the general formula of an amino acid derivative which is N-protected by an imido group or a synthetically equivalent group and wherein the carboxyl function has been transformed into a dithioester function or a synthetically equivalent persulphurated moietyl.

Claim 11 **(original)** A first intermediate compound according to claim 10, wherein the imido group is a phthalimido group.

Claim 12 **(previously amended)** A first intermediate compound according to claim 10, obtainable via steps a to g of the method of the invention.

Claim 13 **(previously amended)** A first intermediate compound according to claim 10, being ethyl 3-(N-phthalimido)-aminopropanedithioate, N-3,3,3-trifluoro-2-thioxopropyl) phthalimide, N-{[2-(trifluoromethyl)-1, 3-dithiolan-2-yl] methyl} phthalimide, methyl(or ethyl) 3-phthalimide-2,2-difluoropropanedithioate, N-[2,2-difluoro-3,3,3-tris(methylthio) propyl] phthalimide or N-[2,2-difluoro-3,3,3-tris(ethylthio)propyl] phthalimide.

Claim 14 **(original)** A second intermediate compound having the general formula of a [^{18}F]-labelled perfluorinated amino acid derivative which is N-protected by an imido group or a synthetically equivalent group.

Claim 15 **(original)** A second intermediate compound according to claim 14, wherein the imido group is a phthalimido group.

Claim 16 **(previously amended)** A second intermediate compound according to claim 14, obtainable via steps a to h of the method of the invention.

Claim 17 **(previously amended)** A second intermediate compound according to claim 14, being N-(3,3,3-trifluoropropyl)phthalimide.

Claim 18 **(original)** A third intermediate compound having the general formula of a [^{18}F]-labelled perfluoroalkyl amime.

Claim 19 **(original)** A third intermediate compound according to claim 18, being [^{18}F]-labelled 3,3,3-trifluoropropyl amime.

Claim 20 **(previously amended)** A third intermediate [^{18}F]-labeled compound obtainable via steps a to i of the method of the invention.

Claim 21 **(cancel)**

Claim 22 **(previously amended)** A [^{18}F] labeled bioactive compound synthesized using as intermediates a first and third intermediate as claimed in claim 10, a second intermediate having the general formula of a [^{18}F]-labeled perfluorinated amino acid derivative which is N-protected by an imido group or a synthetically equivalent group.

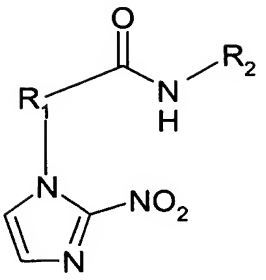
Claim 23 **(previously amended)** A [^{18} F] labeled bioactive compound synthesized using as intermediates a first intermediate as claimed in claim 10.

Claim 24 **(previously amended)** Method of perfluorination using as an intermediate a compound as claimed in claim 10.

Claim 25 **(original)** The compound of claim 22 which is an [^{18}F]-labeled perfluorinated nitroimidazole compound having an incorporation of [^{18}F] atoms characterized by a specific radioactivity of the compound comprised between 1 and 30 Ci/mmol, preferably between 1 and 20 Ci/mmol, preferably 1 and 10 Ci/mmol.

Claim 26 **(currently amended)** A method for the detection of tissue hypoxia in a patient comprising:

- producing a [^{18}F-labeled perfluorinated-nitroaromatic compound having the formula:



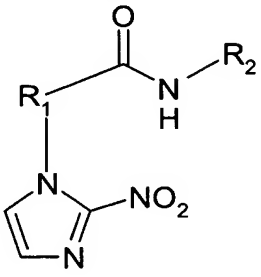
wherein R_1 is CH_2 and R_2 is an alkyl group having up to about 6 halogen atoms, wherein said alkyl group has the formula $CHXCX_2\ CY_3$ where X is halogen or hydrogen and Y is fluorine by coupling 2-(2-nitro-imidazol-1-yl) acetic acid with a [^{18}F]-labeled perfluoroalkyl amine derivative;

- introducing an [^{18}F] labeled nitroimidazole compound of claim 31 into said patient,
- imaging tissue hypoxia in said patient, and
- quantifying tissue hypoxia in said patient.

Claim 27 **(original)** A method according to claim 26 wherein the detection technique used in said method is positron emission tomography.

Claim 28 **(currently amended)** A method for the detection of tissue hypoxia in a tissue comprising:

- producing a [^{18}F-labeled perfluorinated-nitroaromatic compound having the formula:



wherein R_1 is CH_2 and R_2 is an alkyl group having up to about 6 halogen atoms, wherein said alkyl group has the formula $CHXCX_2\ CY_3$ where X is halogen or hydrogen and Y is

fluorine by coupling 2-(2-nitro-imidazol-1-yl) acetic acid with a [^{18}F]-labeled perfluoroalkyl amine derivative;

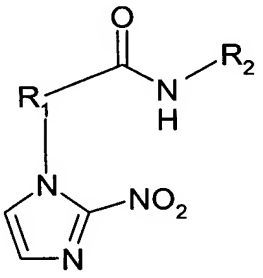
- introducing ~~an~~ said [^{18}F] labeled nitroimidazole compound of claim 31 into a patient,

-removing a tissue sample from said patient, and

-analysing the emission in said tissue sample by autoradiograohy.

Claim 29 **(currently amended)** A method for the detection of an [^{18}F] labeled bioactive compound in a patient comprising:

- producing a [^{18}F-labeled perfluorinated-nitroaromatic compound having the formula:



---

wherein R_1 is CH_2 and R_2 is an alkyl group having up to about 6 halogen atoms, wherein said alkyl group has the formula $CHXCX_2\ CY_3$ where X is halogen or hydrogen and Y is fluorine by coupling 2-(2-nitro-imidazol-1-yl) acetic acid with a [^{18}F]-labeled perfluoroalkyl amine derivative;

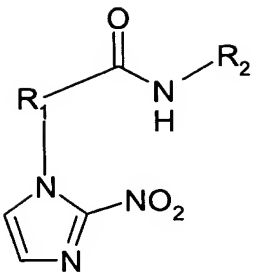
- introducing ~~an~~ said [^{18}F] labeled bioactive compound according to claim 31 into said patient,

- imaging the presence of said [^{18}F] labeled bioactive compound in said patient, and

-optionally, quantifying the presence of said [^{18}F] labeled bioactive compound in said patient.

Claim 30 **(currently amended)** A method for the detection of [^{18}F] labeled bioactive compound in a tissue comprising:

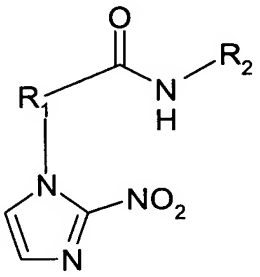
- producing a [^{18}F-labeled perfluorinated-nitroaromatic compound having the formula:



wherein R_1 is CH_2 and R_2 is an alkyl group having up to about 6 halogen atoms, wherein said alkyl group has the formula $CHXCX_2\ CY_3$ where X is halogen or hydrogen and Y is fluorine by coupling 2-(2-nitro-imidazol-1-yl) acetic acid with a [^{18}F]-labeled perfluoroalkyl amine derivative;

- introducing an [^{18}F] labeled bioactive compound of claim 31 into a patient,
- taking a tissue sample from said patient, and
- analysing the emission in said tissue sample by autoradiography.

Claim 31 **(currently amended)** A method for the synthesis of a [^{18}F]-labelled perfluorinated-nitroaromatic compound having the formula:



wherein R_1 is CH_2 and R_2 is an alkyl group having up to about 6 halogen atoms, wherein said alkyl group has the formula $CHXCX_2\ CY_3$ where X is halogen or hydrogen and Y is fluorine, comprising coupling 2-(2-nitro-imidazol-1-yl) acetic acid with a [^{18}F]-labeled perfluoroalkyl amine derivative.

Claim 32 **(currently amended)** A ~~compound~~ method according to claim 31, ~~having~~ wherein the compound has a specific radioactivity ~~of the compound comprised between~~ of 1 ~~and~~ to 30 Ci/mmol~~, preferably between 1 and 20 Ci/mmol, preferably between 1 and 10 Ci/mmol~~.

Claim 33 **(currently amended)** A ~~compound~~ method according to claim 31, ~~having~~ wherein the compound has the formula 2-(2-nitro-1H-imidazol-1-yl)-N-(3,3,3-trifluoropropyl) acetamide ([^{18}F]-EF3).

Claim 34 **(currently amended)** A ~~compound~~ method according to claim 32, ~~having~~ wherein the compound has the formula 2(2-nitro-1H-imidazol-1-yl)-N-2,2,3,3,3-pentafluoropropyl) acetamide ([^{18}F]-EF5).

Claim 35 **(cancel)**